

INTRODUCTION

Electronic Human Resource Management: challenges in the digital era

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This introduction has become a reflection on a two-year debate during the e-HRM and HRIS conferences and therefore echoes the latest discussions about e-HRM research and its role within organizations from both HR- and IT-centred studies. We view e-HRM as an umbrella term covering the integration of HRM and IT, aimed at creating value for targeted employees and managers. This editorial discusses key issues and new challenges in e-HRM research.

New steps in practice of e-HRM

Information technology completely infuses HRM processes and HRM departments in today's global networking timeframe. For more than a decade now, digital possibilities have been challenging traditional ways of delivering HRM services within business and public organizations.

As one of the early IT adopters in 1980s, HR function used to employ IT for administrative processes, primarily payroll processing, with little attention being paid to so-called transformational HR practices (DeSanctis 1986). In 2006, as the CedarCrestone 2006 HCM Survey shows, companies broadened the scope of HRM applications: although administrative e-HRM was still the most popular application (62% of surveyed companies), companies reported an increasing use of strategic applications like talent acquisition services (61%), performance management (52%), or compensation management (49%) (CedarCrestone 2006). Financial investments in e-HRM in 2006 already showed a slight preference towards strategic applications: companies estimated their investments in simple management reporting tools as 11% for an up-coming year, while they planned to increase their budgets, for example, in career planning tools by 15% and 19% for competence management (*ibid*). According to other sources, HR technology budgets were about 4% annually (HRFocus 2003), and sales of the HR technologies were estimated to be worth US\$300 billion over the last decade (Hawkin, Stein and Foster 2004).

All in all, organizations around the world are no longer surprised by e-HRM and are ready to invest in it further. We see new steps in the practice of e-HRM caused by (or due to) recent organizational developments. For example, e-HRM applications are no longer 'stand-alone' tools but mostly a part of more complicated ERP systems, where e-HRM modules are integrated with financial or other modules. Next, there is a new discourse in organizational life engineered by e-HRM: self-service portals; HR user friendliness; streamlined processes; HRIS vendors, etc. Additionally, e-HRM projects are now run by

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cross-functional teams while five years ago such projects were in the hands of MIS professionals, who selected software methodology and designed business processes around the configuration of the hardware. These examples show that the introduction of e-HRM into organizational life increasingly calls for an integration of diverse expertise, interdisciplinary comprehension, and modernization of the HR profession.

Re-defining e-HRM?

e-HRM definitions have flourished, with little consistency or agreement in sight. Why do we need to understand how researchers define e-HRM? Simply because minor switches in terminology (discourse) might result in different directions of studies or in diverse subsets of the e-HRM target population.

Since the very early works on the intersection between web-based technologies and human resource management (for an overview, see DeSanctis 1986), a number of definitions have been proposed regarding the phenomenon that later was called e-HRM. e-HRM was interchangeably coined with HR Information System (HRIS), virtual HR(M), web-based HRM, intranet-based HRM.

DeSanctis (1986) kicked off an early definition of HRIS as a ‘specialized information system within the traditional functional areas of the organization, designed to support the planning, administration, decision-making, and control activities of human resource management’ (p. 16). This definition emphasized an information system and could be interpreted to exclude the process of its adoption, which plays an important role in achieving its goals. Studies that employ an HRIS-focused definition do not state any human resources as a research population. Nor do they include HRM-related outcomes. A decade later, Haines and Petit (1997) considered HRIS as a system used to acquire, store, manipulate, analyze, retrieve, and distribute pertinent information about an organization’s human resources (p. 261). Although the term HRIS is still in use, we assume that there is a difference between the early information systems for HRM and the currently used information technologies for HRM, or e-HRM. The main and foremost difference is the magnitude and reach of e-HRM.

Some definitions see e-HRM as conducting HR transactions using the Internet or intranet (Lednick-Hall and Moritz 2003). Consequently, if a researcher is using such a definition, it could be argued that value created by e-HRM would likely be assessed as improvement of the administrative HR processes. Here, transformational outcomes of e-HRM like employee involvement or workforce alignment might be ignored. Following the ‘transactional’ tradition, Voermans and Van Veldhoven (2007) write, ‘e-HRM could be narrowly defined as the administrative support of the HR function in organizations by using Internet technology’ (p. 887).

Other studies expanded the e-HRM definition with a network structure as a central issue. Strohmeier (2007), for example, defines e-HRM as the ‘[planning, implementation and] application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of HR activities’ (p. 20). Lepak and Snell (1998) used the term ‘virtual HR’ to describe a ‘network-based structure built on partnerships and mediated by information technologies to help the organization acquire, develop, and deploy intellectual capital’ (p. 216). However, if e-HRM applications do not support the network of people in an organization but offer only an administrative facility, would the latter be excluded in such studies? Furthermore, the term ‘networking’ needs its own elaboration as there are numerous studies available debating network structures and the process of their appearance. In an attempt to integrate a process

of 'doing' e-HRM, i.e. its adoption and structuring, Ruël, Bondarouk and Looise (2004) define e-HRM as 'a way of implementing HRM strategies, policies, and practices in organizations through the conscious and direct support of and/or with the full use of channels based on web-technologies' (p. 16). However, this definition might lead researchers to the question of how to measure the consequences of e-HRM. Once e-HRM is adopted, does it provide a valuable contribution to an organization as a whole and to its different stakeholders?

We conclude that e-HRM researchers have not standardized a definition of e-HRM yet. Different perspectives (IT and HR) fall under a common label, despite there being no common terminology set in which to create and test ideas, constructs, or concepts.

Therefore, after an almost two-year long discussion with e-HRM researchers, we put forward an e-HRM definition that we believe represents the consensus-based understanding of electronic HRM. We define e-HRM as:

an umbrella term covering all possible integration mechanisms and contents between HRM and Information Technologies aiming at creating value within and across organizations for targeted employees and management.

This definition suggests an integration of four aspects:

- Content of e-HRM: it concerns any type of HR practices that can be supported with IT, either administrative or transformational; it also concerns any type of IT that can offer support for HRM, either Internet, intranet, or complicated ERP systems. Researchers are expected to clarify the match between a type of IT and the type of HR practices.
- Implementation of e-HRM: it involves the process of adoption and appropriation of e-HRM by organizational members. Researchers should anticipate the ways they judge the success of e-HRM implementation. Are we talking about e-HRM diffusion, acceptance, appropriation, adoption, or user-satisfaction?
- Targeted employees and managers: whereas until the mid-1980s HRIS was primarily directed towards the HR department, by the turn of the century, line management and employees were actively involved in using e-HRM applications. Nowadays, at any given second, thousands of people are zipping around the Internet in search of employment opportunities, forcing organizations to direct e-HRM effort towards potential candidates (HRFocus 2003). It means that modern e-HRM broadens its target and goes beyond the organization's borders to address the needs of all stakeholders. At this point, researchers are supposed to focus on a specific stakeholder group as the e-HRM target in their studies.
- e-HRM consequences: along with the discussion on value creation and value capture (Lepak, Smith and Taylor 2007), we stress a multilevel perspective viewing e-HRM value creation as 'subjectively realized by a target user who is the focus of value creation' (*ibid.*, p. 182). It means that either an individual employee or an HR professional, the whole HR department, organization, or a net of several organizations is willing to exchange money for the value received from e-HRM. Lepak et al. (2007) note further that the monetary amount exchanged must exceed the producer's costs (time, training, effort, money, meetings dedicated to e-HRM projects); and it is approximated as a delta between new value (like freedom from HR administration or less paper work) and the users' alternative.

Challenges for e-HRM research

Led by rapid e-HRM developments in the professional HR world, scholars have been accelerating their attempts to understand the phenomenon of e-HRM and its multilevel consequences within and across organizations. As a sign of this, within the last four years at least three special issues in international academic journals have dedicated their pages to e-HRM.

‘New technologies are all around us... This is just as true in the field of human resource management...’ noted Mark Huselid in 2004 in his Editor’s Note to the Special issue on e-HR in *Human Resource Management*, and he called for a deeper understanding of the consequences of e-HRM on the HR organization (Huselid 2004). In yet another Editor-in-Chief’s Note, four years later, Theresa Welbourne advanced this topic by stressing the role of Information Technologies in social networks of HR academics and practitioners. By attributing a steady rise in the number of HRM papers submitted to the journal to IT facilities, she called for broadening of the social network through ‘the spirit of using Web 2.0 tools’ (Welbourne 2008). In a Call for Papers for a Special Issue on Technology and HRM, in the *Journal of Managerial Psychology*, Hal G. Gueutal called for articles ‘that focus on the “paradigm shift in HRM practices” related to “the amount, quality, and utilization of technology in HRM service delivery”’ (Gueutal forthcoming). In addition to special issues, several scholars published books on e-HRM (Jones 1998; Walker 2001; Ruël et al. 2004; Kalika Guilloux, Laval and Matmati 2005; Gueutal and Stone 2005; Martin, Reddington and Alexander 2008; Strohmeier 2008).

Reflecting on the discussions in previous special issues on e-HRM, we propose halting duplicate studies about cost reduction and a ‘magic’ transformation of an HR department into a strategic unit because of the introduction of e-HRM. First, for the past few years, cost containment was the strongest focus of e-HRM practice and research. We assume that there won’t be any more costs to cut in the coming years. Therefore, we encourage researchers to focus on the integrative *consequences* of deploying e-HRM in organizations. Second, organizations are definitely silent about whether their HR departments become ‘more strategic’ with e-HRM. By focusing on the strategy literature on competitive advantage, Marler (this issue) shows that a primarily administrative HR function is highly unlikely to become more strategic with the introduction of e-HRM. On the other hand, e-HRM can become more strategic as a consequence of an existing strategic HR function. Additionally, from a strategic point of view, standard e-HRM configurations as advocated by vendors and consultants accelerate ‘competitive’ convergence rather than reinforce distinctiveness and competitive advantage. We see that research across different e-HRM studies has produced contradictory findings of the tangible benefits of e-HRM: some HR activities benefited by adopting e-HRM (cost savings, efficiency, flexible services, employee participation), whereas others created extra organizational barriers (work stress, more HR administration, disappointments with technological properties) (for a detailed overview, see Strohmeier 2007). We are convinced that it is time to look at e-HRM as an *investment* in HRM professionalization. Therefore, the overall message of this issue is best captured in a few challenges representing current e-HRM academic discourse: clarifying the strategic ambiguity of e-HRM; conceptualizing relationships between e-HRM and human capital development; the e-HRM web of delivery channels and perceptions of e-HRM; and measurement of value creation for diverse groups of users.

With reference to clarifying the strategic ambiguity of e-HRM in the digital era, it is broadly argued that increased use of e-HRM allows HR professionals to achieve improved

performance and thus facilitate participation in internal consultancy activities (Hussain, Wallace and Cornelius 2007). Moreover, it is assumed that HR professionals both provide value to the organization and improve their own standing in the organization by using e-HRM (Lawler and Mohrman 2003). e-HRM is also considered a medium to help HR professionals in making strategic decisions through the provision of executive reports and summaries (Broderick and Boudereau 1992). In contrast, Ball (2001) in her survey among small and medium-sized UK companies (127 usable returns, 24.4% response rate) found that e-HRM was primarily used in support of routine administrative HR tasks, for 'filing cabinet replication'. Hussain et al. (2007) in their survey among 101 senior HR professionals (22% response rate) in UK companies discovered that less than 50% of them used e-HRM in support of HR strategic tasks. The authors optimistically concluded that e-HRM is 'likely to be used more for strategic decision making in the future' (Hussain et al. 2007, p. 85). However, the recent survey among 210 HR executives in leading Canadian corporations (response rate 13.6%) showed that e-HRM is 'still being used more for administrative ends than for analytical or decision support ends' (Haines III and Lafleur 2008, p. 534).

At this point it is probably wise to notice that imitation has always been the driving force behind the diffusion of any technological innovation (Ciborra 2002). e-HRM is no exception. Unfortunately, if every organization is about to adopt the same or similar e-HRM applications, any competitive advantage evaporates. Marler (this issue) stresses that e-HRM can be copied and built by any firm and can only generate economic returns where no firm enjoys any distinctive or sustainable advantage in its introduction. Our point is that before embarking on an e-HRM journey, organizations should answer strategic questions like: does it really pay to be innovative? Is e-HRM offering a true competitive advantage or just representing competitive necessity? What are the ways to implement e-HRM in a form that it is not easily copied?

Addressing this challenge, Strohmeier (this issue) calls for a general understanding of e-HRM *consequences* to support decision-making, viewing them all as phenomena that accompany and/or follow the integration of IT and HRM. Strohmeier recognizes, however, that the concept of consequences is not without complications as it involves eight different aspects: origin; explanation; divergence; dynamic change; (un)expectedness; (un)desirability; manageability; and researchability. Up to this point, our discussion has implied that the outcomes of the use of e-HRM in organizations cannot be considered straightforward, either strategic or routine. We would support competing viewpoints in understanding the strategic value of e-HRM. Further, this author sends a strong message to researchers to be aware of their methodological departure points, whether they start from technological or 'human will' determinism/voluntarism. This should serve future studies concerning an adequate combination of e-HRM consequences and the level of methodological determinism.

The second challenge, conceptualizing relationships between e-HRM and human capital development, continues the discussion on the strategic use and consequences of e-HRM. Nowadays, as the balance of business power is shifting towards emerging economies, 'traditional' developed economies are no longer dominant, management practices from 'the East' are rapidly growing, and multinational enterprises are determined to take a broader and a longer term view regarding global talent management. e-HRM is believed to facilitate global talent search and retention. Shilakes and Tylman (1998) opened an arena for so-called HR portals that were considered a gateway to making informed business decisions based on personalized information in organizations, and to monitoring, bundling and building up organization-wide knowledge resources.

Similarly, Ruta (this issue) focuses on a specific role of an HR portal as a source of creating and developing intellectual capital. Taking a strategic alignment perspective, he explores the impact of the alignment between HR portal configuration and HR strategy on the creation of intellectual capital. Based on the results of an in-depth case study in a large multinational company, Ruta concludes that where the HR portals are frequently and easily accessed, the HR portal configuration, once aligned with the HR strategy, does leverage intellectual capital creation and development. Further, it is shown that HR professionals become accountable for e-HRM (HR portal) design and choices regarding its applications. Thus, our discussion of e-HRM as an investment in HRM professionalization suggests that e-HRM gives organizations a unique opportunity to bring their HR function to a new level.

The third challenge, the e-HRM web of delivery channels and perceptions of e-HRM, reflects a grown-up stage when e-HRM involves not only the implementation of e-tools but also the creation of a clear HRM vision and (re)structuring of the HR function. One of the examples of restructuring and envisioning of the HR function due to e-HRM implementation is the emerging interest in HR Shared Service Centers (Farndale, Paauwe and Hoeksema, this issue). Next to modern, well-designed, and technically well-functioning IT-based HRM, time-honored face-to-face HRM services are becoming obsolete. The traditional two-level HRM function based on HR department and middle managers is being questioned for its (in)flexibility, rigidity, innovative incapacity, and inferior efficiency and effectiveness. Forced by (or because of) intensive intervention of IT in HRM, the conservative infrastructure of the HRM function is resisting the transition to a multilevel, contingencies-dependent HRM including HR corporate central departments, decentralized HR specialists and administrators, line managers, and employees (Strohmeier, this issue).

Measurement of value creation for diverse groups of users, the fourth challenge, is needed as the user focus has already become a core issue in IT development and implementation. Given the WEB 2.0 reality, researchers should acknowledge that e-HRM users are USERS 2.0, knowing e-sources for finding reliable high-quality information and how to bypass applications that do not fit their needs. Therefore, for new applications to be useful, users need to acknowledge the usefulness. By definition, different users (groups) have different views of whether e-HRM is relevant and to what extent, concerning their HR tasks. A simple division into management, employees, and HR professionals has only limited value. Within those groups, multiple subgroups can be identified that are asking for their specific needs to be addressed by researchers. This perspective is important, in our view, as it suggests that there will be conflicting interpretations and levels of appreciation of e-HRM by diverse stakeholders. Moreover, both research and practice must dedicate time and effort towards recognizing and dealing with these differences. There is some empirical evidence showing that e-HR practices vary considerably in the extent to which they involve line managers and/or employees (Ruël, Bondarouk and Van der Velde 2007), that e-HRM requires changes in the whole structure of work and relationships, HR-line collaboration, and the ability of managers to manage the e-HRM journey (Reddington and Hyde 2008).

Extending this logic, Bondarouk, Ruël, and van der Heijden (this issue) explore conflicting interpretations of e-HRM by line managers and employees. They found that although an e-HRM application was perceived differently by the two stakeholder groups, those differences were not mirrored in the e-HR design and ultimately caused misunderstandings and lack of e-HRM usage. The authors recognize that targeted stakeholders may still work with an e-HRM application, but this does not guarantee its

appreciation. This article is but one example of the individual level of analysis in this special issue. Talking about different stakeholders, we should broaden the e-HRM scope towards vendors, consultants, top management, HR managers, line, workforce, and society (for example, management fashion is very important in e-HRM projects as discussed by Marler in this issue). We do realize that the call for a multi-stakeholder perspective in e-HRM research makes the issue of e-HRM consequences even more complicated. Still, we are convinced that researchers should address different stakeholders of e-HRM if they are to achieve complete understanding of the e-HRM phenomena.

Table 1 portrays the different foci of e-HRM research presented in this issue, including level of analysis, research goal, theoretical lens, and methodology. We continue with framing requirements for future e-HRM research.

Three requirements for good e-HRM research

Our experience in serving as (co)-organizers of two European academic workshops on e-HRM and two international workshops on HRIS taught us a great deal, while simultaneously highlighting the importance of *mutual understanding between seemingly polar scientific fields like IT and HRM*, and how much more work is needed to bring/integrate them together:

‘the e-HRM field is fed and complicated by two academic backgrounds; studies oriented towards IT-implementation and ‘pure’ HRM studies. The former usually investigate the usage of IT for HR purposes and mainly focus on the growing sophistication of technology and the qualities necessary for its adoption. However, these studies remain silent about changes in HR practices due to e-HRM. HR-based e-HRM studies generally only examine single e-HR practices, focusing on the changes in HR processes and functions following automation. These studies tend to avoid issues (and problems) related to implementation and on-going use of IT’ (Bondarouk and Ruël 2006, p. 3).

More directly, we are convinced that an attempt to bring together HRM- and IT- focused e-HRM studies articulates the distinctiveness of this special issue.

We should add that this special issue is a result of the *prolonged engagement* of all of the authors in e-HRM research, starting with the 2006 conference, and represents an outcome of a long thought-provoking development. And this editorial note is a result of a consensus of the e-HRM academic community of more than 80 researchers from all over the world, built in the past three years. In the course of our editorial decisions and thinking about e-HRM research challenges, we found ourselves repeatedly facing the question of criteria for good e-HRM research. For this reason, we awarded extra attention to principles guiding e-HRM research.

Therefore, while selecting articles for inclusion in this volume, we developed three criteria that in our view build a basis for a *good* e-HRM academic study:

- First, the study should clearly address the *multidisciplinary nature* of the e-HRM field, showing an attempt to assimilate IT and HRM knowledge domains. It implies that researchers are not free to treat one of the fields as ‘black boxes’; on the contrary, they have to offer conceptualization to unfold them both (IT and HR) in their study.
- Second, such studies should elaborate on the *e-HRM discourse* that is to become instrumental in constructing shared thinking, symbols, language, and epistemological boundaries of this research area. We believe such discourse should frame the professional identity and prescribe the kinds of activities in which e-HRM researchers will engage and, ultimately, the kinds of knowledge they will recognize, value and produce.

Table 1. Overview of the contributions.

<i>Level of analysis / stakeholder group</i>	<i>Research goal</i>	<i>Theoretical lens</i>	<i>Methodology</i>	<i>Article</i>
Organization / HR function	To develop a model of e-HRM strategy formulation	Strategic HRM, Resource-based view	Theoretical	J. Marler
	To conceptualize consequences of e-HRM	Strategic IT implementation	Meta-analysis	S. Strohmeier
	To explore the impact of HR SSCs on the HR delivery and professional logics	Strategic HRM, Service delivery	Mixed methodology: Questionnaires and interviews	E. Farndale, J. Paauwe and L. Hoeksema
Individual / line managers / employees	To explore the facilitating role of HR portal configurations in intellectual capital creation and development	Strategic HRM intellectual capital	Case study in a multinational consulting company	D. Ruta
	To study the impact of the use of e-HRM on perceived HRM effectiveness	Strategic and technical HRM effectiveness, technology acceptance model	Qualitative methods: documents and interviews	T. Bondarouk, H. Ruel and B. van der Heijden

- Third, research should clearly demonstrate a *contribution to theory building* and (if applicable) to the practice of e-HRM projects. It should specify a level of theory contribution and the target group it aims at. The former is expected to be a matter of choice at the organizational, global, inter-organizational, group, or individual level. The latter should unfold a specific stakeholder group for which e-HRM is being researched (top management, HR corporate, HR department and specialists, line managers, and/or employees).

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